REMARKS

The following remarks are submitted in response to the Office Action dated March 19, 2003. Applicant has carefully reviewed all grounds for rejections and objections and has addressed them in this response. Claims 1-10 are pending in this application. All pending claims except claim 5 are rejected. Claim 5 is objected to as being dependent on a rejected base claim, and the Office Action indicated that it would be allowable if rewritten in an independent from, incorporating all elements of the claims from which it depends. Applicant thanks the examiner for this indication and presents arguments in favor of patentability of the presently rejected claims 1-4 and 6-10.

Amendment to the Drawings

The Office Action rejected Fig. 5 as mislabeled at box 26, which should have been labeled "Digital to Analog Converter". Instead, the box is labeled "Digital Signal Processor". A corrected drawing is enclosed with the corrections shown in red ink. No new matter is added as a result of this correction. The Examiner is requested to review and enter the corrected drawing.

Amendment to the Specification

The Office Action objected to incorporation by reference of a non-US application or patent. This is corrected by amending the specification referencing a corresponding United States patent application. The United States patent application U.S. as Ser. No. 09/479,271 filed January 6, 2000 corresponds to and claims priority to the European Patent application 99 300 192.4 filed 12 January 1999. Applicant believes that this reference overcomes the cited objection and therefore respectfully requests reconsideration.

Amendment to the Abstract

The Office Action rejected to the Abstract as having the title of the invention therein. The Abstract is rewritten to overcome this rejection. Language for this new paragraph is obtained from page 4, line 32 – page 5, line 6. Accordingly, no new matter

is added as a result of this change. The Examiner is respectfully requested to review and replace the old Abstract with this amended version.

Amendments to the Claims

The Office Action rejected Claims 1 and 8 under 35 U.S.C. §112 as being indefinite. The Office Action stated that the claims recited both general and particular language, thereby rendering the claims indefinite. Claim 1 is amended to remove the objected language from it. Claim 8 is canceled and rewritten without the objected language as claim 12.

Claims 4 and 6 are amended to remove language informalities. Specifically, the claims recite "The method of claims 1." This language is corrected to read --The method as in claim 1.--

The claims as amended do not introduce any new matter. The Examiner is requested to review and enter these amendments. A clean copy of the currently pending claims is attached herein.

Addition of New Claims

Two new dependent claims, 11 and 13 are added with this amendment. The added claims do not introduce new matter. Instead, they recite in a dependent form, the language objected to under 35 U.S.C. §112 regarding claims 1 and 8 respectively. As these are dependent claims, and the total number of claims does not exceed 20, there is no additional fee required. A new fee computation is attached. Examiner is requested to examine and enter the amendments.

Claim Rejection under 35 U.S.C. §§102(e) and 103(a)

The Office Action rejected claims 1-10 as being unpatentable under 35 U.S.C. §102(e) over USP 6,356,608 to Atarius. Applicant respectfully traverses this rejection for the following reasons.

Atarius discloses a method of detecting a frequency synchronization signal

"A peak value representing a signal detected by the receiver is calculated, a frequency offset between the frequency reference of the receiver and the carrier

frequency of the transmitter is estimated, and a quality factor indicating the accuracy of the estimated frequency offset is estimated. ¶ <u>The location of the frequency synchronization signal is determined by comparing the calculated peak value and the estimated quality factor with predetermined peak and quality thresholds, e.g., determining whether the peak value is greater than or equal to a peak threshold and whether the quality factor is less than or equal to a quality threshold.</u> When both of the predetermined threshold conditions are met, the peak value, frequency offset, and quality factor are stored. When either of the threshold conditions is not met, the location of the frequency synchronization signal corresponds to the location of a stored maximum peak value and a stored minimum quality factor." *See* Summary of the Invention. [Emphasis added.]

The Office Action cited a portion of the specification, col. 4, line 63 – col. 5, line 67, which is summarized in the above summary of the invention. The instant disclosure, however, claims a method different from that of Atarius. The presently rejected independent claim 1, for example, recites in part as follows.

    d) using said noise-reduced signal values <u>for adapting a filter to the frequency of said constant frequency intervals</u>;

    e) using said adapted filter to filter telecommunication signal for generating values;

    ....[Emphasis added]

Independent claim 9 recites in part as follows.

    ... <u>a coefficient generator using said noise-reduced signal values for adapting a filter to the frequency of said constant frequency interval</u>....[Emphasis added].

In particular, Atarius does not teach of suggest the steps (d) – (e), which recite an adaptive filter to which noise-reduced signal values are input. Because Atarius does not teach or suggest the usage of an adaptive filter, claims 1 and 9 are believed to be patentable over Atarius.

The Office Action rejected claim 4 as being obvious under 35 U.S.C. §103(a) over Atarius in view of Arora. Applicant notes, however, that Arora suggests usage of an adaptive filter. But Arora and Atarius do not suggest or teach that they are combinable to achieve the steps recited in the instant independent claims. References may be combined only if there is a suggestion or motivation within the references themselves that they could be so combined. Here, such motivation or suggestion to combine is not present in either Atarius or Arora. Accordingly, Applicant respectfully submits that the presently claimed independent claims are patentable over the cited art. Because independent claims are believed to be patentable, all claims dependent on the independent claims are also patentable. Applicant respectfully requests reconsideration.

CONCLUSION

In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration and a notice of allowance. No fee is due with this response.

Respectfully Submitted,

(44,602)

Naren Chaganti, Esquire
432 S. Curson Ave, Ste. 12 H
Los Angeles, CA 94306
(650) 248-7011 phone
(323) 571-9428 fax
naren@chaganti.com
Attorney for Applicants

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The undersigned, an attorney, hereby certifies that on the date shown below, this paper (together with any other papers mentioned or referenced herein as being enclosed) was mailed to:

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Date: 6-19-03   NAREN CHAGANTI

Clean Copy of the Currently Pending Claims (as Amended)

1.   A method for determining the position of a constant frequency interval in a telecommunication signal, said method comprising the steps of:

   a) receiving said telecommunication signal;

   b) detecting an occurrence of said constant frequency interval in said telecommunication signal;

   c) obtaining a plurality of noise-reduced signal values by a noise-reducing processing of at least a part of said constant frequency interval in said telecommunication signal;

   d) using said noise-reduced signal values for adapting a filter to the frequency of said constant frequency intervals;

   e) using said adapted filter to filter telecommunication signal for generating values; and

   f) determining a predefined reference point of said constant frequency interval on the basis of said filtered output values.

2.   The method of claim 1. wherein said predefined reference point is one of the beginning and the end of said constant frequency intervals in said telecommunication signal.

3.   The method of claim 1, wherein said step f) comprises determining peak values of said filtered output values of said adapted filter, and at least one of:

   g) detecting an amplitude change of said peak values exceeding a predefined threshold, and

   h) detecting a non-periodic time interval between said peak values.

4.   The method of claim 1, wherein said filter is a FIR bandpass filter whose filter coefficients are at least some of said noise-reduced signal values.

5.   The method of claim 4, wherein said filter coefficients of said filter are chosen to be a consecutive sequence of said noise-reduced signal values representing essentially an

integral number of full cycles of said noise-reduced signal values.

6.   The method of claim 1, wherein each noise-reduced signal value is an auto-correlation value or a cross-correlation value between a first and a second section of said telecommunication signal, said first and said second section being displaced by a varying displacement.

7.   The method of claim 6, wherein said occurrence of said constant frequency interval in said telecommunication signal is detected on the basis of said noise-reduced signal values.

8.   (canceled)

9.   An apparatus for determining the position of a constant frequency interval in a telecommunication signal, said apparatus comprising:

an analyzer for detecting an occurrence of said constant frequency interval in said telecommunication signal;

a noise-reducing filter unit for obtaining a plurality of noise-reduced signal values by a noise-reducing processing of at least a part of said constant frequency interval in said telecommunication signal;

a coefficient generator using said noise-reduced signal values for adapting a filter to the frequency of said constant frequency interval;

said filter filtering said telecommunication signal for generating filtered output values; and

a position detector for determining a predefined reference point of said constant frequency interval on the basis of said filtered output values.

10.   The apparatus of claim 9, wherein the apparatus is a mobile telephone.

11.   The method of claim 1, wherein the telecommunication signal is a frequency correction burst.

12.   The method of claim 1, wherein said telecommunication signal is a wireless mobile telephony signal.

13.   The method of claim 1, wherein said telecommunication signal is a GSM baseband signal.